Michael Higley-Vance **August 21, 2013**

Educational Research Methodology Assignment #1

Part 1: Understanding The Doctoral Research Process
Research is a term with many connotations. Use the reading for this Section to write a short paper on doctoral research that embraces your goals for your research. Into that view, integrate the concepts of validity and reliability and the function of critical thinking/logic.

Length for Part I: 3-5 pages (app. 350 words per page)

Part 2: Annotated Bibliography
An ongoing activity throughout this course will be the development of an annotated bibliography on topics of interest. Ultimately, these annotations will form the starting point for your doctoral Literature Review.

Your annotated bibliography entries should be of two types: those that relate in content to potential research topics of interests to you and annotations that relate to the content of this course.

For this first Activity, please submit 3 complete annotations of your choosing. Your Mentor will provide feedback that you should use on all future annotations.

For each of the Activities 2 – 7, you should produce at least 2 but not more than 4 annotations. These annotations should become more focused as the course proceeds. These annotations will not be submitted each week but will be submitted as part of the Signature Assignment in Activity 8 not on an Activity-by-Activity basis.

Part II Length: 3-5 pages (app. 350 words per page). Include 3-5 references on your view of your doctoral research.

Note – additional guidance from Dr. Rice in the Annotated Bibliography Example in the Classroom Resource Tab:

Ensure each entry into your annotated bibliography includes the characteristics below: (a) State the thesis and scope of the study; (b) name the hypothesis of the study; (c) what population was studied; (d) Conclusion or findings, (d) Methodology and main points – mention if the study was a survey, case study, type of experiment, etc., and who the subjects were and how they were recruited; and (e) Evaluation of the study – evaluate work's relationship to other works in this area of study.

Using the Comments feature of Word (per the below) highlight areas of the description to show where these characteristics are.

Prepare your work in the format below – single space reference and double space description. Do not use more than two spaces between entries.

Faculty Use Only

Michael – I do apologize for the note requesting a resubmit – usually when I see the first assignment in two separate submissions it is because a student has not read my guidance – yours was a very nice beginning except for that! I very much enjoy your writing style. See comments throughout and in the Grading Key. You did a nice job including validity and reliability (and explanation of both) and your goals for research. Note not to use direct quotations unless absolutely necessary – make assertions in your own words and back them up with citations.

Excellent effort on your annotated bibliography. It contains the (a) thesis and scope, (b) hypothesis, (c) population, (d) conclusion or findings (e) methodology, and (e) evaluation – how does this study relate to other works? In future submissions you may use entries that are not studies – just include an evaluation. Excellent work! See follow-on reports.

Dr. Donna Rice **8/1/13**

Grading Key

10 Excellent 9 Above Average 8 Adequate 7 Needs Improvement 6 Not Acceptable
25 Excellent 20 Above Average 15 Adequate 10 Needs Improvement 5 Not Acceptable

Content 70%

10 Demonstrated a well-developed focus (Introduction)

10 Thorough points of development (Listed major points to be covered)

10 A logical pattern or organization of discussion ideas and concepts required in activity (used at least two levels of headings)

10 Achieved stated learning outcome(s)

10 Integrated key concepts and terms from course materials

10 Evaluated and applied concepts learned

10 Demonstrated learning through use of examples and/or illustrations

10 Supported insights and assertions through research and use of additional outside academic resources

8/10 Met length requirement (850 out of 1040)

10 Ended with a conclusion that summarized paper without adding new information and without repeating introduction

98/100 Total

Writing 30%

25 Appropriate and precise language

25 Proper use of APA

25 Clear divisions between the writer's voice and the sources used to support claims

25 Consistent use of standard American English in grammar and punctuation

100/100 Total

Fundamentals of Research

Michael Higley-Vance

Northcentral University

Fundamentals of Research

The term research can have two completely different expectations. Educators often ask students to research a topic where they are expected to collect information, record facts, and

subsequently organize the information they've found into a nicely written paper. This type of research is merely a collection of what has already been observed, tested, and written about but serves an important purpose; to inform and educate students about information not previously learned. However, there is a second and more formal expectation to the term where the word research eventually serves to answer a question or problem (Leedy & Ormrod, 2010). The purpose of this paper is to explore the fundamentals of formal research and establish an understanding of a) the research process for my own academic development, b) describe the importance of validity and reliability within research methodology, and c) discuss the critical thinking skills necessary to analyze and evaluate the data and information collected within a formal scientific research study.

The Research Goals

The goals of scientific research are to describe, predict, and understand a phenomenon (Hale, 2011 April). As I slowly inch closer to the dissertation process my goal is to acquire a methodical and in-depth understanding of the research process. Through this effort I plan to learn and apply a systematic research process, which will increase and enhance a scientific understanding of learning and teaching within an online learning environment. The research process is cyclical and consists of six processes in which the research study must experience: beginning with the problem or hypothesis, a stated clear and defined goal, its subproblems, the assumptions, the collection of data, and finally the interpretation of the data (Leedy & Ormrod, 2010, p. 7). I also recognize that in order to conduct a valid and respected research study I must focus on the research process' eight unique characteristics, which help guide, develop, and formulate the final assumption or answer. The research process characteristics are as follows: the question posed, the goal, the research plan, its subproblems, the researcher's hypothesis, the

assumptions made, the collection of data, and lastly that research follows logical, developmental steps which ultimately supports or not supports the research hypotheses (pp. 2-8).

The Research Plan

I'm currently serving as a middle school assistant principal responsible for the effective teaching demonstrated by over 60 teachers and the successful learning of just over 800 students. My plan is to utilize two current computer program environments, which both involve learning online, to develop a research study which will enhance and improve student learning and teaching in my school. This study will hopefully answer questions about effective online learning and teaching in the secondary public school system. As I conduct an applied research study over the course of one full school year I intend to use quantitative methods to collect research information and data. Using the information collected from the study and observations of student progress I will use deductive and inductive reasoning to help construct answers to the questions and hypothesis being posed.

Valid and Reliable Research

Measurement is an important part of a scientific research project and is considered the foundation for determining the research project's contribution to the scientific community (Hale, 2011 October; Leedy & Ormrod, 2010).

> The validity and reliability of your measurement instruments influence the extent to which you can learn something about the phenomenon you are studying, the probability that you will obtain statistical significance in your data analysis, and the extent to which you can draw meaningful conclusion from your data. (Leedy & Ormrod, 2010, p. 28).

Donna Rice 8/25/13 4:26 PM
Comment [1]: Reduce or eliminate direct quotations – reviewers will ask you to make statements in your own words and back them with sources.

Although a research project is composed of many steps it is the step where the validity and reliability of the measuring tool is considered the most important when developing a scientific answer to the stated problem, observation, or hypotheses.

Critical Thinking

"The human mind is undoubtedly the most important tool on the researcher's workbench" (Leedy & Ormrod, 2010, p. 31). Typically before a research project begins researchers look at previous studies and theoretical perspectives related to problem or hypothesis. During this evaluation critical thinking can take on four different contextual forms and can encompass more than one form at the same time: verbal reasoning, argument analysis, decision-making, and critical analysis of prior research (p. 32). I plan to conduct a critical analysis of other studies and theoretical perspectives and while using verbal reasoning compare these studies to my own research findings in hopes to develop answers related to my stated problem or hypothesis.

In addition to the four contextual forms, critical thinking also involves making inferences using deductive and inductive reasoning, evaluating, and ultimately making decisions or solving problems (Lai, 2011). Deductive logic begins with an assumption, which is thought to be true, and then proceeds towards conclusions that are proven to be true or false (Leedy & Ormrod, 2010, pp. 32-33). While inductive reasoning observes a behavior and then draws a conclusion about an entire group based solely on that observation (pp. 33-34). It will be necessary in my research to utilize both deductive and inductive reasoning to help analyze and evaluate the information collected during the study.

Conclusion

Ultimately my doctoral research goal is to study and report on the learning and teaching effects associated with students and teachers who use learning and teaching strategies in two online environment situations. To be successful in this endeavor I will need to follow the six research steps and ensure that my research project consistently demonstrates the eight research characteristics. In addition to the eight research characteristics I will also need to be cognizant of how important it is to keep my research project scientifically valid and reliable as I develop an answer to the question or problem posed. Finally, when I evaluate the data collected and begin to formulate an answer I will utilize both deductive and inductive critical thinking skills to increase the reliability and validity of my answer. Practicing each one of these important components of formal research will help me make a worthy and scholarly contribution to the theory of learning and improve learning and teaching for all students in education.

References

Hale, J. (2011 April 17). Understanding research methodology 3: Goals of scientific research. Online blog, *World of Psychology*. Retrieved from http://psychcentral.com/blog/archives/2011/04/17/understanding-research-methodology-3-goals-of-scientific-research/

Hale, J. (2011 October 16). Scientific measures: Reliability and validity. Online blog, *World of Psychology*. Retrieved from http://psychcentral.com/blog/archives/2011/10/16/scientific-measures-reliability-and-validity/

Lai, E. R. (2011). *Critical thinking: A literature review*. Pearson. Retrieved August 22, 2013 from http://www.pearsonassessments.com/hai/images/tmrs/criticalthinkingreviewfinal.pdf

Leedy, P., & Ormrod, J. (2010). *Practical research: Planning and design.* Saddle River, NJ: Merrill. ISBN: 978-0-13-715242-1

Donna Rice 8/25/13 4:27 PM
Comment [2]: Remove hyperlinks

Annotated Bibliography

Irvin, M. J., Hannum, W. H., de la Varre, C., & Farmer, T. W. (2010). Barriers to distance education in rural schools. *Quarterly Review Of Distance Education*, *11*(2), pp. 73-90. Retrieved on August 21, 2013 from http://proxy1.ncu.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ehh&AN=53953959&site=eds-live

A national survey of 417 randomly selected, low-income, rural school systems in the United States was conducted to determine the barriers to the use of distance learning education. The study was guided by these specific aims: the relationship between districts, the association between districts and course offerings, the relationship between delivery formats, and to examine the relationship between course completion and students' satisfaction with distance learning, and any barriers to overcome (p. 73). The study used a telephone survey entitled the Rural Distance Education Survey (RDES). The rural school districts that were randomly selected qualified for the 2004-2005 Rural Education Achievement Program (REAP). These school districts typically have fewer than 600 students and a county with fewer than 10 people per square mile. The survey was developed by research staff to measure several types of barriers related to online learning in rural school districts and was administered by trained interviewers (pp. 77-78). The survey questions asked school administrators or other qualified staff to identify barriers to online learning to which their district had experienced. The frequency of barriers encompasses thirteen ranked barriers from four separate categories. 67.7% of respondents indicated that the primary barrier was a lack of curriculum requirements using online learning methods. 63.7% of respondents indicated that there was a lack of funding by the school district to support distance learning. And finally, the least number of respondents, at 7.4%, indicated that an insufficient connectivity was the least barrier

Michael 8/25/13 4:21 PM
Comment [3]: Scope of study

Michael 8/25/13 4:21 PM
Comment [4]: Hypothesis

Michael 8/25/13 4:21 PM
Comment [5]: Population

Michael 8/25/13 4:21 PM
Comment [6]: Methodology

experienced. In addition, rural schools often face shortages of teachers, especially in high-level courses such as chemistry, physics, calculus, etc. For the most part, rural schools may only have a small percentage of their student body interested in taking such courses, so hiring a full-time teacher in many cases in not financially feasible. Online learning can alleviate this problem. Research to date has shown students who learn through technology, including distance education; typically have learning outcomes at least as good as students who learn through face-to-face instruction. Subsequent research may focus on determining the impact of distance education on a broader range of students including minority groups and specific personnel. Another aspect may be to explore ways to prepare students to be successful online learners. The results from this study support conclusions from other studies however, ongoing studies should be conducted with various measurement tools to help determine the benefit and considerable promise distance education may continue to provide (p. 88).

Michael 8/25/13 4:21 PM
Comment [7]: Conclusion/Findings

Michael 8/25/13 4:21 PM
Comment [8]: Evaluation of study

Jones-White, D. R., Radcliffe, P. M., Huesman Jr., R. L. & Kellogg, J. P. (2010). Redefining student success: Applying different multinomial regression techniques for the study of student graduation across institutions of higher education. *Research in Higher Education, 51*(2), pp. 154-174. doi: 10.1007/s1116-009-91449-4

Jones-White et al. focus their article on the polychotomous definition of student success with more sophisticated methods of modeling. They do this by "comparing multinomial regression techniques to assess their utility in modeling multi-institutional student success" (p. 154). The authors use matriculated data to define "student success" and outcomes. Additionally the authors claim that student success should account for students who transfer and obtain degrees at other colleges, as well as students who transfer but do not graduate. Once an understanding of the types of successes had been

Michael 8/25/13 4:21 PM
Comment [9]: Scope of study

Michael 8/25/13 4:21 PM
Comment [10]: Methodology and main points - study

Michael 8/25/13 4:21 PM
Comment [11]: Hypothesis

defined, Jones-White et al. identified probable outcomes for that success. The authors used a "statistically rigorous approach" to studying three years of matriculating freshman at the University of Minnesota-Twin Cities with data from the university's student records and the National Student Clearinghouse's StudentTracker service (p. 156). The authors were able to define the variables that most often impacted student success by creating a probability equation, which helped calculate the data. The focus of this article has raised discussion among educational institutions by its development of an equation for determining student success. Although this research was confined to the University of Minnesota-Twin Cities, the variables used can be applied to other educational institutions. Jones-White et al. findings suggested that colleges refine how student success is defined. Currently the emphasis is placed on graduation rates from matriculated data but with an increasingly transient student population enrolling in other schools and dropping out of college, the traditional definition of student success is no longer applicable.

Michael 8/25/13 4:21 PM
Comment [12]: Population being studied

Michael 8/25/13 4:21 PM
Comment [13]: Part of scope

Michael 8/25/13 4:21 PM
Comment [14]: Evaluation of study compared to other institutions

Michael 8/25/13 4:21 PM
Comment [15]: Findings

Téllez, K. (2011). A case study of a career in education that began with "Teach for America". *Teaching Education, 22*(1), pp. 15-38. doi: 10.1080/10476210.2010.541238

Kip Téllez explores the life of a teacher named "Steven", describing his educational and professional journey during and after his participation in the controversial Teach for America (TFA) program. Téllez conducted his case study beginning in 1999 and spanning through 2006. During this time the author's focus began with the intent to find out if pre-service (student) teaching is necessary and its effectiveness to teacher and student success in the classroom. The author defines his research approach as a "biographical study" using an "inductive case-study approach" (p. 16). "Steven" started

Michael 8/25/13 4:21 PM
Comment [16]: Population studied

Michael 8/25/13 4:21 PM
Comment [17]: Scope of study

teaching mathematics with no formal education and credited his perceived success to teaching from the text, taking instruction out of the classroom, and simply going above the standard. Téllez records the reasons leading up to "Steven's" TFA placement in a math classroom, his success, and the fact that he had little teaching experience. Later "Steven" moves to a social studies class with English Language Learners (ELL), which provided many new challenges and required formal education that "Steven" thought would be beneficial to his own success. Finally the author examines "Steven's" efforts to embed himself into the ELL culture. At the end of the case study "Steven" had become an administrator, indicating his perceived success in education. Téllez notes that "Steven's" success could be, in part, due to teaching in lower income communities. "In wealthier communities, parents demand that their child's teachers have both experience and expertise, thus making it unlikely that many non-credentialed teachers would be hired", Téllez states (p. 34). The author adds that "Steven" is a good example of someone who is successful at teaching without formal training however; he stresses the need for more research to look at the necessity and efficiency of pre-service programs like TFA. Téllez goes beyond addressing the effectiveness of the TFA program to argue that a teacher's formal education does not always determine their success in the classroom. The research conducted in this study proves that a teacher with no formal education can achieve long-term success in education.

Michael 8/25/13 4:21 PM
Comment [18]: Methodology and main points

Michael 8/25/13 4:21 PM
Comment [19]: Conclusion of findings

Michael 8/25/13 4:21 PM
Comment [20]: Evaluation of study